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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/539,188	06/16/2005	Nobuhiro Ito	14633.0008USWO	2230

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EXAMINER	
NWAONICHA, CHUKWUMA O	
ART UNIT	PAPER NUMBER
1621	
MAIL DATE	DELIVERY MODE
09/14/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/539,188	ITO ET AL.	
	Examiner	Art Unit	
	CHUKWUMA O. NWAONICHA	1621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 April 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,5-9 and 11-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,5-9 and 11-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☒ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *08/04/2010*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

No translation of the priority document

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 23 April 2010 has been entered.

The 103 rejection of claims 1-3, 5-9 and 13 under 35 U.S.C. 103(a) as being unpatentable over Dingwen et al., {JP 4517402} in view of Kato et al., {US 4,874,890} is withdrawn because the prior art references cited do not teach all the claims limitation.

This Application is a 371 of PCTIJP03/14182 11/07/2003.

Current Status

Claims 1-3, 5-9 and 11-17 are pending in the application.

Priority

Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having

ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-3, 5-9, 11 and 13-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Garnett et al., {Catalytic deuterium exchange reactions with aromatics. VI. Platinum catalyst reproducibility and activation procedures, Journal of Catalysis (1963), 2(4), 339-347} in view of Keto et al., {5,221,768}.

Applicants claim a method for deuteration of a compound represented by the general formula 1; wherein all the variables are as defined in the claims.

Determination of the scope and content of the prior art (M.P.E.P. §2141.01)

Garnett et al. teach a process for deuteration of compound having C=C double bands, which is directly bonded to an aromatic ring, in the presence of activated platinum catalyst. This process is capable of efficient deuteration of hydrogen atoms at double bound containing compounds, for example; benzene and anthracene. The activated platinum catalyst is used in the presence of deuterated solvents and in the absence of alkali metal deuteroxide. See pages 339-342 and 344.

Ascertainment of the difference between the prior art and the claims (M.P.E.P.. §2141.02)

Garnett et al. method for deuteration of a compound differs from the instantly claimed process in that applicants' claim a process is broader in scope than the teaching of Garnett et al. Specifically, Garnett et al. teach a process that employed platinum catalyst while Applicants claim a process that employs one activated catalyst selected from a palladium catalyst, a platinum catalyst, a rhodium catalyst, a ruthenium catalyst, a nickel catalyst and a cobalt catalyst

However, Kato et al. teach a process that employed a heavy hydrogen gas. Meth)acrylic acid is deuterated directly by exchange of hydrogens in the presence of a catalyst. The catalyst is for example Pd, Ru, Ir, Rh and Pt compounds and in the absence of alkali metal deuteroxide. See column 2: lines 9-61 and the working examples.

Finding of prima facie obviousness--rational and motivation (M.P.E.P.. §2142-2143)

The instantly claimed method for deuteration of a compound would have been suggested to one of ordinary skill based on the teaching of Garnett et al. and Kato et al. because the references in combination teach activating the catalysts before use.

One of ordinary skill in the art would have a reasonable expectation of success in practicing the instant invention by varying the process conditions from the teaching of Garnett et al. and Keto et al. to arrive at the instantly claimed method for deuteration of a compound. Said person would have been motivated to practice the teaching of the references cited because activation of the catalyst before use is an excellent way of producing deuterated compounds, which are useful in industrial applications.

The Examiner notes that varying the reaction conditions in a chemical reaction is a well-known chemical practice to optimize the process efficiency of the system and does not constitute a patentable distinction. Merely modifying the process conditions such as temperature and concentration is not a patentable modification absent a showing of criticality. In re Aller, 220 F.2d 454, 105 U. S. P. Q. 233 (C. C. P. A. 1955).

Moreover, all the claimed elements including activating in advance the catalyst before use were known in the prior art references cited and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention.

Claim Rejections - 35 USC § 102

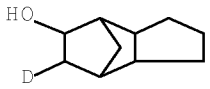
The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 12 is rejected under 35 U.S.C. 102(b) as being anticipated by Cristol et al., {Bridged polycyclic compounds. XX. Cis stereochemistry of the addition of methanol and water to endo-trimethylenenorbornene, Tetrahedron Letters (1963) 185-189}.

As the invention is claimed as a product by process, the claims are construed as encompassing any product that might be produced according to the process, irrespective of the method by which it was actually made. Even though product-by-

process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. Therefore, Cristol et al. disclose applicants claimed deuterated compound as shown below. See abstract.



Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chukwuma O. Nwaonicha whose telephone number is 571-272-2908. The examiner can normally be reached on Monday thru Friday, 8:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Sullivan can be reached on 571-272-0779. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Daniel M Sullivan/
Supervisory Patent Examiner, Art Unit 1621